REMARKS

Entry of the foregoing and reconsideration of the application identified in caption, as amended, pursuant to and consistent with 37 C.F.R. §1.111 and in light of the remarks which follow, are respectfully requested.

At the outset, Applicants note that the Interview Summary issued on December 2, 2009, accurately reflects the substance of the interview conducted on September 28, 2009.

By the above amendments, new claim 29 has been added which recites that at least one internal layer is in direct contact with the external layer. Support for such new claim can be found in the instant specification at least at page 3, lines 21-24, taken in connection with the examples.

In the Official Action, claims 1-3, 5-11, 19, 21-25, 27 and 28 stand rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,425,817 (*Mugge et al*) in view of U.S. Patent No. 5,039,786 (*Pipper et al*). Claims 12 and 14-18 stand rejected under 35 U.S.C. §103(a) as being obvious over *Mugge et al* in view of *Pipper et al*, and further in view of European Patent Document No. 0 646 627 (*Princiotta et al*). Claim 13 stands rejected under 35 U.S.C. §103(a) as being obvious over *Mugge et al* in view of *Pipper et* al, and further in view of U.S. Patent No. 5,357,030 (*Van Buskirk et al*). Claim 26 stands rejected under 35 U.S.C. §103(a) as being obvious over *Mugge et al* in view of *Pipper et al*, and further in view of U.S. Patent No. 4,881,576 (*Kitami et al*). Withdrawal of these rejections is respectfully requested for at least the following reasons.

Mugge et al does not disclose or suggest each feature recited in independent claim 1. For example, *Mugge et al* does not disclose or suggest at least an external

layer formed from a composition comprising as a polymer matrix a polyamide composition comprising: (i) a polyamide thermoplastic copolymer obtained by copolymerization of ε-caprolactam, and a mixture of hexamethylenediamine with a diacid comprising at least 9 carbon atoms, the ratio by weight between the ε-caprolactam and the total amount of hexamethylenediamine and diacid being between 4 and 9, as recited in claim 1. In this regard, the Patent Office has acknowledged that *Mugge et al* does not disclose or suggest a ratio by weight between the ε-caprolactam and the total amount of hexamethylenediamine and diacid being between 4 and 9. See Official Action at page 3.

Applicants also note that while *Mugge et al* has been relied on for disclosing the use of an impact modifier, there is no specific disclosure of employing such impact modifier in the formation of an internal layer, as is presently claimed. Rather, *Mugge et al* merely discloses that any of the polyamide and/or polyester materials described therein can be impact modified, without any specific recognition of the use of the impact modifier in the formation of an internal layer. See col. 3, lines 24-26.

Pipper et al fails to cure the above-described deficiencies of *Mugge et al*. In this regard, the Patent Office has relied on *Pipper et al* for disclosing a copolymer of caprolactam and a mixture of hexamethylene diamine with a diacid having 12 carbons at a particular ratio. See Official Action at page 3. However, like *Mugge et al*, *Pipper et al* does not have any recognition or suggestion of employing such ratio in obtaining a polyamide thermoplastic copolymer of a polyamide composition of the composition for forming an **external** layer of the multilayer structure.

Even if *Mugge et al* and *Pipper et al* would have been combined, such alleged combination fails to disclose or suggest that the impact-resistance modifier is

employed in the formation of an **internal** layer of the multilayer structure. As well, the alleged combination fails to disclose or suggest that the ratio by weight between the ε-caprolactam and the total amount of hexamethylenediamine and diacid of between 4 and 9, is employed in connection with the formation of the **external** layer of the multilayer structure. Applicants respectfully but strenuously submit that by such non-obvious combination of employing the impact-resistance modifier in the formation of an internal layer, and the claimed ratio in the formation of an external layer, a tubular or pipe multilayer structure can be attained, for example, having excellent chemical resistance to exterior substances, while retaining excellent flexibility and impact resistance characteristics. By comparison, *Mugge et al* is merely focused on barrier properties and chemical resistance to substances being transported **within the pipe**, and has no concern for the chemical resistance to exterior substances. See col. 3, lines 54-60. Quite clearly, it would not have been obvious to the ordinarily skilled artisan to modify the applied documents to arrive at the claimed tubular or pipe multilayer structure.

The other secondary applied documents fail to cure the above-described deficiencies of *Mugge et al* and *Pipper et al*. In this regard, the Patent Office has relied on *Princiotta et al* for disclosing the use of an acid-modified ultra low density polyethylene having specific characteristics. Official Action at page 5. *VanBuskirk et al* has been relied on for disclosing the addition of a chain extender to polyamide 6. Official Action at page 6. *Kitami et al* has been relied on for disclosing a gasoline hose having specific characteristics. Official Action at page 7. Even if the above secondary applied documents would have combined with *Mugge et al* and *Pipper et al* in the manner suggested by the Patent Office, the resulting combination

nevertheless fails to disclose or suggest an external layer formed from a composition comprising as a polymer matrix a polyamide composition comprising a polyamide thermoplastic copolymer obtained by copolymerization of ε-caprolactam, and a mixture of hexamethylenediamine with a diacid comprising at least 9 carbon atoms, the ratio by weight between the ε-caprolactam and the total amount of hexamethylenediamine and diacid being between 4 and 9, as recited in claim 1. Further, the resulting combination fails to disclose or suggest that an impact-resistance modifier is employed in the formation of the internal layer, as recited in claim 1.

For at least the above reasons, independent claim 1 is non-obvious over the applied documents.

Dependent claim 29 is further distinguishable from the applied documents. Such claim recites that at least one internal layer is in direct contact with the external layer. By comparison, *Mugge et al* teaches the use of an intermediate layer comprising a linear, crystalline polyester-based molding composition interposed between and bonding together the inner and outer layers. See abstract and col. 1, lines 56-59. It would not have been obvious to the ordinarily skilled artisan to modify *Mugge et al* by removing such intermediate layer from the pipe, in view of the fact that *Mugge et al* teaches the criticality of such layer in bonding together the inner and outer layers of the pipe.

For at least the above reasons, it is apparent that the claims are non-obvious over the applied art. Accordingly, withdrawal of the §103(a) rejections is respectfully requested.

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such action is earnestly solicited. If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

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